

Title (en)  
Linear-gain amplifier arrangement.

Title (de)  
Verstärkerschaltung mit Linearverstärkung.

Title (fr)  
Circuit amplificateur à amplification linéaire.

Publication  
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Application  
**EP 89202658 A 19891020**

Priority  
NL 8802631 A 19881026

Abstract (en)  
A linear-gain amplifier arrangement comprises a current amplifying cell constructed by means of field-effect transistors and comprising a first (M1, M3) and a second (M2, M4) current-mirror circuit whose respective input transistors (M1; M2) and output transistors (M3; M4) constitute a first and a second differential pair. The input transistors (M1; M2) have their drain electrodes connected to a voltage-current converter (V/I) comprising field-effect transistors, which supplies difference currents (lin1, lin2) which are square-law functions of the input voltage (Uin) to be amplified. The difference between these input currents (lin1; lin2) is a linear function of the input voltage (Uin). When the transistors are operated in their saturation regions the difference between the output currents (Iout1; Iout2) is also a linear function of the input voltage (Uin). By adding a direct voltage (Vc) to the gate-source voltage of the input and output transistors (M1, M2; M3, M4) or by adding a direct current (Ic) to the respective input currents (lin1; lin2) the gain can be varied without a change in bandwidth. When the arrangement is constructed as an integrated semiconductor circuit its gain can be made immune to temperature variations and tolerances in the fabrication process.

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**H03F 1/32** (2013.01 - KR); **H03F 1/3211** (2013.01 - EP US); **H03G 1/04** (2013.01 - EP US)

Citation (search report)  
• [Y] US 4459555 A 19840710 - JETT JR WILLIAM B [US]  
• [Y] DE 2646954 A1 19770512 - RFT MESSELEKTRONIK DRESDEN VEB  
• [Y] US 3790897 A 19740205 - WHEATLEY C  
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